TABLE I.

Barometer.	First observed. Date.	First observed. Lat. N.	First observed. Long. W.	Last observed. Lat. N.	Last observed. Long. W.	Duration.	Velocity per hour.	Maximum abnormal changes in pressure in twelve hours, with maximum abnormal changes in temperature and maximum wind velocities in connection therewith. Rise.	Station.	Date.	Fall.	Station.	Date.	Miles per hour.	Direction.	Station.	Date
High areas.		°	°	°	°	Days.	Miles.	Inch.			°						
I	1	41	108	29	80	3.5	24	.42	Parry Sound, Ont	1	26	Raleigh, N. C	1	48	n.	Key West, Fla	2
II	3	55	109	35	72	7.5	14	.48	Calgary, N. W. T	3	23	Bismarck, N. Dak	3	56	n.	Hatteras, N. C	8
III	10	40	127	40	110	5.0	19	.32	Fort Canby, Wash	10	26	Calgary, N. W. T	10	44	e.	Fort Grant, Ariz	14
IV	13	54	107	27	80	4.5	25	.35	Fort Sully, S. Dak	14	28	Des Moines, Iowa	14	52	nw.	Hatteras, N. C	16
V	18	54	109	38	75	2.0	50	.48	Washington City	19	18	Lynchburgh, Va	19	36	nw.	Bismarck, N. Dak	18
VI	20	41	128	43	60	5.5	30	.58	Lynchburgh, Va	23	33	Fort Grant, Ariz	20	48	nw.	Fort Custer, Mont	21
VII	23	45	127	43	95	3.0	28	.44	Montrose, Colo	24	15	Helena, Mont	23	60	nw.	Fort Buford, N. Dak	24
VIII	26	37	126	33	83	3.5	35	.82	Concordia, Kans	27	29	Salt Lake City, Utah	26	68	nw.	Fort Elliott, Tex / Fort Sill, Ind. T.	27
IX	28	54	117	45	97	3.5	14	.36	Denver, Colo	31	31	*Palestine*, Tex	31	42	nw.	Bismarck, N. Dak	28
Mean	....	47	118	37	84	4.2	27	.47	.....	....	25	.....	....	50	.....	.....	....
Low areas.								Fall.			Rise.						
I	1	53	108	43	68	4.0	23	.66	Qu'Appelle, N. W. T	1	29	Valentine, Nebr	2	34	w.	Buffalo, N. Y	4
II	2	35	73	49	61	1.5	40	.48	Eastport, Me	3	10	Yarmouth, N. S	3	56	n.	Block Island, R. I	3
III	5	33	86	50	58	1.5	54	.46	Anticosti Island, G. of S. L	7	11	Jacksonville, Fla / Mobile, Ala	5	44	ne.	.....do	6
IV	8	47	128	50	102	2.0	31	.50	Fort Buford, N. Dak	8	32	Calgary, N. W. T	10	60	se.	Fort Canby, Wash	8
V	9	40	104	47	80	2.0	43	.36	Des Moines, Iowa	9	23	Leavenworth, Kans	10	48	w.	El Paso, Tex	10
VI	11	26	101	51	60	6.5	22	.46 / .44	Anticosti Island, G. of S. L / Chatham, N. B	16 / 17	14	Montreal, Quebec	17	48	sw.	Montreal, Quebec	17
VII	15	52	119	42	67	4.5	44	.62	Minnedosa, Man	15	27	Fort Buford, N. Dak	15	60	ne.	Block Island, R. I	19
VIII	17	46	128	48	67	4.0	33	.52	*Minnedosa*, Man / Anticosti Island, G. of S. L	19 / 21	26	Saint Vincent, Minn	19	46	w.	Denver, Colo	19
IX	21	31	100	45	59	2.5	50	.40	Block Island, R. I	22	23	Atlanta, Ga	21	46	w.	Anticosti, Gulf of St. L	23
X	22	50	122	49	57	4.5	34	.70	Halifax, N. S	26	22	Fort Sully, S. Dak	23	52	s. / se.	Dodge City, Kans / Fort Elliott, Tex	23
XI	25	49	130	47	58	4.5	41	.70	Indianapolis, Ind	27	22	Norfolk, Va	28	68	ne.	Chicago, Ill	27
XII	29	43	120	30	107	2.5	25	.26	Montrose, Colo	30	16	El Paso, Tex	29	44	s.	Brownsville, Tex	31
Mean	....	42	110	46	70	3.3	37	.50	.....	....	21	.....	....	51	.....	.....	....

NORTH ATLANTIC STORMS FOR MARCH, 1890 (pressure in inches and millimetres; wind-force by Beaufort scale).

The paths of the depressions that appeared over the north Atlantic Ocean during March, 1890, are shown on chart i. These paths have been determined from international simultaneous observations by captains of ocean steamships and sailing vessels received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

Ten depressions have been traced for March, 1890, the average number traced for the corresponding month of the last seven years being 9.4 The greatest number of depressions previously traced for March was twelve, in 1889, and the least number was seven, in 1883 and 1888. Of the depressions traced for the current month six advanced eastward over Newfoundland, one apparently developed near Bermuda, one was central southwest of the Azores during the first four days of the month, and two first appeared over mid-ocean east of the thirtieth meridian. One depression advanced from the middle Atlantic coast, where it was central on the morning of the 19th, to the British Isles by the 22d; the remaining depressions which advanced eastward from American waters passed north of the region of observation before reaching the European coast. Over the western part of the ocean the severer storms of the month occurred on the 2d, 3d, 8th to 10th, 17th, 19th, 20th, and 28th. Over mid-ocean, along and north of the trans-Atlantic steamship routes, generally settled weather prevailed until the 10th, after which date there were marked fluctuations in barometric pressure, with gales of varying force, until the close of the month, the 15th, 23d, and 25th being marked by storms of considerable strength. Over the eastern part of the ocean, north of the fiftieth parallel, the pressure was prevailingly low from the 4th to 27th. At noon, Greenwich time, of the 16th, the barometer had fallen to 29.08 (739) at Leith, Scotland; on the 15th a reading of 29.15 (740), was reported at Valentia, Ireland; and on the 24th the pressure was below 29.00 (737) northwest of the British Isles. The 7th, 8th, 14th, 17th, 18th, 25th, and 26th were also marked by very low barometric pressure over and near the British Isles.

Mr. B. Cecil, Director General of Telegraph, at Tegucigalpa, Honduras, has made the following report: "On the 1st, at about 4 p. m., a severe hurricane passed over the north coast of Honduras from the northeast. All banana plantations along the line of the hurricane were ruined; houses, etc., were blown down, but no lives were lost. The weather was very cold and rainy, and in Truxillo very heavy winds prevailed. The telegraph line which had just been finished will have to be rebuilt."

Compared with the corresponding month of the last seven years, the depressions traced for March, 1890, while exceeding in number the March average, were not attended by storms of exceptional violence; storms of marked severity were not reported east of the fortieth meridian, and the more violent storms of the month were reported off the coast of the United States on the 2d, over and south of the Canadian Maritime Provinces on the 3d, northeast of Bermuda on the 9th, over and near Newfoundland and the Grand Banks on the 17th, off the American coast north of Cape Hatteras on the 19th, over Newfoundland and the Grand Banks on the 20th, and over and west of the Grand Banks on the 28th. Among the more notable storms of March of preceding years was that of March 11–14th, 1888. This was the most violent storm over the eastern part of the country in a number of years, and was remarkable not only for the abnormal course it pursued and the strength of its attending gales, but also for the heavy precipitation, more especially the heavy snowfall in New England and the more northern part of the middle Atlantic states, the marked and sudden changes in temperature, and the steep barometric gradient noted while the storm was central over and south of southern New England. A detailed description of this storm is given in the MONTHLY WEATHER REVIEW for March, 1888.

The movements of areas of high pressure over the north Atlantic Ocean during the month were as follows: On the 1st an area of high pressure extended from east of the Grand Banks

to the Bay of Biscay; by the 2d this area of high pressure had extended westward over the Grand Banks and southward to the fortieth parallel; during the 3d the pressure increased over and near Newfoundland, and by the 4th this area was joined by an area of high pressure which had advanced eastward from the Lake region. On the 4th an area of high pressure, which had advanced from the Gulf States, was central over Florida and southern Georgia, whence it moved off the coast and on the 5th extended from the Bahamas northeastward to the fortieth parallel, on which latter date the area of high pressure, central on the 4th over the Canadian Maritime Provinces, was central over mid-ocean north of the Azores. By the 6th the area of high pressure, central on the preceding date off the American coast, had moved northeastward and united with the area of high pressure over mid-ocean, and the pressure was high from the Canadian Maritime Provinces to the European coast south of the fiftieth parallel. By the 7th this area had apparently contracted westward and occupied the ocean between Newfoundland and the Azores, and by the 8th had moved southeast and was central over the Azores, where it remained nearly stationary during the 9th and 10th. On the 10th an area of high pressure, which had advanced from the Lake region, was central off the middle Atlantic coast, whence it extended northward and eastward during the 11th and 12th, moved east and southeast during the 13th, and on the 14th occupied a limited area southwest of the Azores, in which region it apparently remained nearly stationary until the 19th. On the 17th an area of high pressure was central over Florida, whence it had advanced from the middle and lower Mississippi valleys; on the 18th this area was central over the Bahamas, after which it apparently disappeared by a decrease in pressure. On the 24th an area of high pressure, which had advanced from the Lake region, extended from the lower lakes southward to the twenty-fifth parallel; by the 25th this area had extended eastward south of the Grand Banks; by the 26th it occupied an area extending from Newfoundland southward and southeastward; by the 27th it occupied a small area east of the Grand Banks, and by the 28th had apparently moved southeastward over the Azores. On the 30th an area of high pressure, which had advanced from the lower Mississippi valley, was central over and east of Florida, whence it extended northward along the coast and eastward over the ocean by the 31st.

The following are brief descriptions of the depressions traced for March, 1890:

1.—During the first four days of the month a well-defined cyclonic area was central west-southwest and southwest of the Azores, although its centre could be approximately located on the 1st and 2d, only, after which it apparently moved southeastward. During this period barometric pressure falling to about 29.60 (752), and moderate to fresh gales were reported in that region. During the prevalence of this depression an area of high pressure occupied the ocean to the north and northeast of its position, which fact apparently prevented the storm from pursuing the usual northeasterly course.

2.—This depression was a continuation of low area iii, which was central on the middle Atlantic coast on the 6th and over Nova Scotia on the morning of the 7th. The depression moved northeast over Newfoundland by the morning of the 8th, after which it recurved to the east of the Grand Banks by the morning of the 9th, and by the 10th had apparently united with depression number 4 which had advanced from near Bermuda. The storm increased in energy during the 8th and 9th, when fresh to strong gales prevailed over and near the Grand Banks.

3.—This depression was first located east of Bermuda by reports of the 8th, and by the morning of the 9th had moved northeastward to about N. 36°, W. 58°. By the morning of the 10th the centre of depression had moved to the east of the Grand Banks, after which it passed northeastward and disappeared north of the region of observation. This depression developed great energy on the 9th, when pressure falling to about 29.45 (748) and gales of hurricane force were reported north and northeast of Bermuda, and on the 10th, when the central pressure was as low or lower than on the preceding date and fresh to strong gales were reported over and near the Grand Banks.

4.—During the 13th and 14th the pressure was low and falling west of the British Isles, and on the latter-named date the readings were below 29.00 (737) along the trans-Atlantic steamship tracks near the twentieth meridian. Reports at hand will not, however, admit of locating the storm-centre until the 15th, on which date the centre of disturbance was in about N. 54°, W. 23°. At noon, Greenwich time, of the 16th the depression had advanced to the British Isles, whence it moved eastward and disappeared over the North Sea by the 17th. This depression was attended by pressure falling to or below 29.00 (737) throughout, but reports do not indicate that it was accompanied by storms of marked violence.

5.—This depression was the continuation of low area vi, which was central over New Brunswick on the morning of the 16th. On the morning of the 17th the depression was central over northern Newfoundland, after which it passed north of the region of observation. On the 17th the pressure fell below 29.20 (742) south of Newfoundland and Nova Scotia, and strong to whole gales were reported in that region, and on the 18th and 19th fresh to strong westerly gales continued over and east of the Grand Banks.

6.—This depression was a continuation of low area vii, which passed northeastward from the middle Atlantic coast during the 19th. On the morning of the 20th the depression was central south of Newfoundland, whence it moved rapidly east-northeast to about the twenty-eighth meridian by the 21st, after which it apparently passed north of the British Isles. On the 19th this depression was attended by pressure falling to about 29.10 (739) and gales of hurricane force south of Nova Scotia, and on the 20th by pressure falling to about 29.20 (742) and strong to whole gales over the Grand Banks, after which there was an apparent decrease in energy.

7.—This depression was a continuation of low area ix, which moved northeastward from the middle Atlantic coast during the 22d. On the morning of the 23d the depression was central east of Cape Breton Island, whence it passed northeastward to the forty-fifth meridian by the 24th, and advanced thence east-northeast to the twenty-fifth meridian by the 25th, after which it disappeared north of the region of observation. This depression was attended by fresh to strong gales throughout, and on the 25th, when central west of the British Isles, barometric pressure falling below 29.00 (737) was indicated, and the pressure continued very low between the fifty-fifth parallel and Iceland during the 26th and 27th.

8.—This depression first appeared over mid-ocean north of the trans-Atlantic steamship tracks on the 23d, and moved thence east-northeast to about N. 58°, W. 16° by the 24th, after which it apparently disappeared over the British Isles. Very low pressure prevailed throughout its course, and on the 24th readings falling to about 28.80 (732) were reported near the storm-centre.

9.—This depression was a continuation of low area x, which moved eastward over the Gulf of Saint Lawrence during the 27th. By the 28th the storm-centre had advanced to about N. 53°, W. 42°, and by the 29th had passed east-northeast to about the twenty-seventh meridian, after which it disappeared north of the region of observation. On the 27th this depression was attended by pressure below 29.30 (744) over the Gulf of Saint Lawrence, and on the 28th by pressure below 29.50 (749), and strong to whole gales east of the Grand Banks, after which there was an apparent decrease in energy.

10.—This depression was a continuation of low area xi, which was central over Nova Scotia on the morning of the 29th. By the 30th the centre of disturbance had moved northeastward over Newfoundland, and on the 31st was central over mid-ocean north of the trans-Atlantic steamship tracks. On the 29th the pressure was below 29.40 (747) over Nova Scotia, and strong gales were reported to the southward, on the 30th

the pressure fell below 29.40 (747) northeast of Newfoundland, and on the 31st strong gales were reported over mid-ocean.

OCEAN ICE IN MARCH.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for March, during the last eight years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
	° ′	° ′		° ′	° ′
March, 1882	42 30	50 00	March, 1882	46 30	46 00
March, 1883	41 46	49 48	March, 1883	48 40	43 03
March, 1884	41 20	54 06	March, 1884	45 00	40 15
March, 1885	40 55	49 04	March, 1885	45 57	43 15
March, 1886	40 20	49 02	March, 1886	47 20	44 40
March, 1887	41 00	49 07	March, 1887	45 31	42 56
March, 1888	42 30	50 37	March, 1888	47 23	46 56
March, 1889	44 20	53 00	March, 1889	44 20	53 00
March, 1890	41 01	50 54	March, 1890	46 40	39 50

In March, 1889, no icebergs were reported, and the only field ice reported was observed in N. 44° 20′, W. 53° on the 2d.

In March, 1890, the southernmost ice reported, a large iceberg in N. 41° 01′, W. 50° 54′, on the 7th, was about one degree south of the average southern limit, and the easternmost ice reported, an iceberg in N. 46° 40′, W. 39° 50′, on the 25th, was about five degrees east of the average eastern limit of ice for March of preceding years. In March of preceding years Arctic ice was reported farther south than for the current month in 1885, 1886, and 1887, while the easternmost ice reported for the current month was east of the extreme eastern limit of ice for March of preceding years. Compared with February, 1890, there was a marked decrease in the quantity of field ice reported for the current month, and there was also a decrease in the aggregate number of icebergs reported. The bays of Newfoundland were generally full of ice, and heavy gulf ice seriously interfered with navigation to the southward of Newfoundland.

Compared with March of preceding years the Arctic ice reported for the current month was about equal in quantity to that reported for 1882, 1883, 1884, 1885, and 1887, the ice reported for March, 1888 and 1889, being largely deficient. The enormous and probably unparalleled quantity of Arctic ice encountered to the eastward and southeastward of Newfoundland during the past winter indicates that there was an abnormally heavy flow of ice from Greenland waters and an unusually open season in the Arctic regions during the summer of 1889. The winter was unusually cold in Newfoundland and vicinity, which condition resulted in an enormous accumulation of field ice along the Newfoundland and Labrador coasts, which was broken away by heavy gales, and the formation of unusually heavy ice in the Gulf of Saint Lawrence.

The following positions of icebergs and field ice reported for March, 1890, are shown on chart i by ruled shading:

1st.—N. 41° 49′, W. 50° 09′, large berg; N. 43° 46′, W. 49° 13′, field ice and bergs; N. 41° 54′, W. 49° 58′, large berg; N. 42° 48′, W. 49° 45′ to N. 42° 46′, W. 51° 15′, field ice; N. 42° 33′, W. 50° 08′ to N. 42° 19′, W. 51° 16′, field ice; N. 42° 42′, W. 50° 17′, large pieces of field ice and two bergs; N. 42° 17′, W. 51° 05′, berg; N. 42° 16′, W. 50° 30′, small bergs and field ice; N. 42° 58′, W. 50° 00′, drift ice and bergs; N. 42° 08′, W. 50° 04′ to N. 42° 07′, W. 50° 28′, two small bergs; N. 44° 30′, W. 49° 11′ to N. 44° 04′, W. 49° 40′, heavy pack ice; N. 43° 56′, W. 50° 50′, twelve large and some small bergs; N. 43° 44′, W. 52° 10′, seven large bergs; N. 45° 11′, W. 47° 31′, two large bergs; N. 42° 26′, W. 51° 07′, three small bergs and field ice.

1st–2d.—N. 42° 48′, W. 49° 45′ to N. 42° 40′, W. 51° 15′, heavy field ice.

2d.—N. 43° 16′, W. 49° 30′, large berg and field ice; N. 43° 57′, W. 49° 42′ to N. 42° 52′, W. 50° 57′, heavy field ice; N. 44° 53′, W. 47° 20′, large berg; N. 42° 20′, W. 50° 59′, small berg and field ice; N. 42° 00′, W. 50° 20′, large berg; N. 42° 00′, W. 49° 48′, one large and two small bergs; N. 42° 06′, W. 50° 48′, large berg and pieces of ice.

3d.—N. 42° 09′, W. 51° 18′, ten large bergs; N. 43° 00′, W. 48° 30′, field ice, one large and several small bergs; N. 42° 33′, W. 50° 08′ to N. 42° 19′, W. 51° 16′, patches of drift ice; N. 41° 35′, W. 50° 53′, large berg and small pieces of ice; N. 43° 34′, W. 49° 00′ to N. 42° 55′, W. 50° 00′, field ice with berg; N. 41° 34′, W. 51° 34′, small berg; N. 42° 03′, W. 51° 14′, small berg; N. 42° 00′, W. 50° 00′ berg; N. 42° 02′, W. 51° 58′, pieces of ice.

4th.—N. 42° 39′, W. 51° 00′ to N. 42° 46′, W. 52° 17′, field ice and large berg; N. 43° 14′, W. 49° 48′ to N. 43° 00′, W. 50° 02′, three large bergs and large pieces of field ice; the harbor of Saint John's, N. F., is full of ice, but it does not obstruct navigation; the Gulf of Saint Lawrence is blocked, and this season is the heaviest one for ice since 1882; N. 41° 15′, W. 51° 20′, two small bergs; N. 41° 44′, W. 51° 10′, two large bergs; N. 41° 44′, W. 50° 32′, four small bergs; N. 41° 44′, W. 50° 10′, large berg; N. 42° 10′, W. 51° 40′, small berg.

5th.—N. 42° 12′, W. 50° 35′, large berg; N. 42° 34′, W. 64° 00′, small ridge of field ice.

6th.—N. 43° 30′, W. 51° 40′, several large bergs; N. 43° 10′, W. 51° 37′, four flat bergs; N. 42° 45′, W. 54° 50′, small berg; N. 42° 15′, W. 50° 55′, very large berg; N. 42° 40′, W. 51° 30′, two large bergs and field ice.

7th.—N. 41° 09′, W. 51° 09′, large berg; N. 44° 30′, W. 49° 11′ to N. 44° 43′, W. 49° 40′, heavy pack ice; N. 43° 56′, W. 50° 50′, twelve large and small bergs; N. 43° 44′, W. 52° 10′, seven large bergs; N. 41° 01′, W. 50° 54′, large berg; N. 41° 09′, W. 51° 09′, large berg and small hummocks of ice.

8th.—N. 42° 56′, W. 49° 34′, large berg; N. 42° 37′, W. 54° 00′, small berg; N. 42° 18′, W. 51° 40′, large berg one-half mile long, 150 feet high; N. 42° 18′, W. 53° 10′, small berg; N. 42° 20′, W. 55° 15′, large berg.

9th.—N. 42° 22′, W. 51° 36′, large flat-topped berg; N. 42° 21′, W. 54° 41′, very large pointed berg; N. 43° 50′, W. 48° 50′, five bergs.

9–10th.—Heavy field ice from about 40 miles outside of Saint John's, N. F., to Banquerau. Was blocked in the ice until the night of the 10th; had to steer 125 miles to southward.

10th.—N. 42° 24′, W. 55° 16′, large berg; N. 42° 30′, W. 55° 35′, small berg with peak; N. 42° 29′, W. 55° 46′, large berg; N. 42° 40′, W. 56° 01′, small berg; N. 42° 18′, W. 51° 40′, large berg; N. 42° 18′, W. 53° 10′, small berg; N. 42° 20′, W. 55° 15′, large berg.

11th.—N. 42° 28′, W. 55° 45′, large berg, with two pinnacles; the harbor of Placentia, N. F., is blocked with ice; N. 41° 14′, W. 50° 58′, large berg.

12th.—N. 43° 18′, W. 49° 35′, to N. 42° 55′, W. 51° 09′, four large and four small bergs; N. 42° 51′, W. 51° 19′ to N. 42° 38′, W. 53° 49′, a large and several small bergs.

13th.—N. 42° 20′, W. 50° 00′, large berg; N. 43° 55′, W. 50° 10′, large bergs and pieces of ice.

14th.—N. 42° 08′, W. 51° 20′, small berg; N. 43° 45′, W. 53° 48′, large berg; N. 41° 10′, W. 50° 22′, small pieces of ice; N. 50° 16′, W. 52° 49′, heavy field ice.

16th.—N. 42° 14′, W. 53° 44′, small berg; N. 42° 13′, W. 54° 18′, large berg; N. 42° 13′, W. 54° 26′, large berg; N. 43° 04′, W. 50° 20′, small berg; N. 44° 40′, W. 45° 30′, large ice field; N. 43° 05′, W. 49° 29′, large berg; N. 45° 00′, W. 48° 20′, large floes of broken field ice.

17th.—N. 42° 41′, W. 51° 41′, small berg; N. 42° 23′, W. 54° 36′, large berg; N. 45° 01′, W. 50° 25′, two small bergs; N. 42° 50′, W. 56° 10′, two bergs.

18th.—N. 43° 40′, W. 49° 18′, three bergs; N. 43° 47′, W. 48° 14′, berg; N. 42° 56′, W. 49° 50′, several large bergs.

19th.—N. 42° 24′, W. 54° 01′, large berg; N. 42° 32′, W. 54° 18′, berg; N. 42° 49′, W. 49° 47′ very large berg; N. 43° 30′, W. 48° 02′, berg; N. 50° 40′, W. 53° 11′, heavy field ice.

20th.—N. 42° 41′, W. 58° 07′, two small bergs; N. 43° 26′, W. 48° 40′, flat berg; N. 45° 56′, W. 59° 10′, heavy ice floes; N. 45° 28′, W. 46° 50′, large berg; N. 44° 45′, W. 48° 50′,

twelve medium bergs, in field ice, ice to the northward as far as could be seen, sailed thirty miles south before clearing field.

21st.—N. 42° 49′, W. 52° 20′, large berg; N. 42° 52′, W. 53° 36′, small bergs; N. 43° 00′, W. 50° 00′, several bergs.

22d.—N. 42° 52′, W. 49° 42′, pieces of ice; N. 43° 34′, W. 47° 41′, two bergs; N. 43° 23′, W. 48° 01′, small berg; N. 43° 20′, W. 48° 20′, large round berg.

24th.—N. 44° 23′, W. 45° 27′, moderate sized berg.

25th.—N. 46° 40′, W. 39° 50′, berg; N. 44° 16′, W. 45° 07′, five bergs; N. 43° 28′, W. 51° 04′, large berg.

26th.—N. 42° 21′, W. 48° 55′, large mound of ice; N. 42° 29′, W. 48° 54′, large berg.

27th.—N. 44° 15′, W. 45° 30′, large berg; N. 44° 05′, W. 46° 00′, a long, low, and very dangerous berg, estimated length several miles.

28th.—N. 42° 48′, W. 49° 22′ to N. 42° 53′, W. 49° 52′, four bergs; N. 41° 40′, W. 48° 50′, medium berg; N. 45° 07′, W. 44° 00′ to N. 43° 35′, W. 47° 35′, five large and two small bergs.

29th.—N. 45° 24′, W. 44° 29′, several long, low, and high bergs; N. 40° 30′, W. 45° 45′, small bergs and field ice; N. 46° 41′, W. 40° 14′, berg; N. 44° 20′, W. 46° 00′, large berg; N. 43° 35′, W. 47° 35′, small berg.

30th.—N. 43° 06′, W. 49° 36′, large flat piece of ice; N. 42° 53′, W. 49° 50′, large, thick, solid berg; N. 43° 20′, W. 49° 50′, large berg; N. 46° 40′, W. 42° 30′ to N. 46° 20′, W. 43° 00′, eight large bergs; N. 43° 27′, W. 50° 31′, large berg; N. 43° 26′, W. 50° 56′, very large berg, about two hundred feet high and fully one thousand feet long; N. 44° 40′, W. 43° 40′, three large bergs; N. 43° 00′, W. 50° 00′, three large and two small bergs.

31st.—N. 44° 48′, W. 45° 10′, four very large flat bergs; N. 43° 00′, W. 48° 12′, two bergs and broken ice.

5 FOG IN MARCH.

The limits of fog belts west of the fortieth meridian are shown on chart i by dotted shading. In the vicinity of the Banks of Newfoundland fog was reported on nine dates; between the fifty-fifth and sixty-fifth meridians on eight dates; and west of the sixty-fifth meridian on six dates. Compared with the corresponding month of the last two years the dates of occurrence of fog near the Grand Banks numbered seven less than the average; between the fifty-fifth and sixty-fifth meridians one less than the average; and west of the sixty-fifth meridian the same as the average. Over and near the Banks of Newfoundland fog was reported on the 1st, 2d, 6th, 16th, 17th, 29th, and 30th with the approach or passage to the northward of low pressure storms; on the 4th with unsettled weather attending the disappearance of an area of low pressure over the Gulf of Saint Lawrence; and on the 14th with stormy weather attending the presence of a cyclonic area to the eastward and a second cyclonic area over the Saint Lawrence Valley. Between the fifty-fifth and sixty-fifth meridians fog was reported on the 2d, 12th to 14th, 22d, 23d, 28th, and 29th, with the approach or passage to the northward of areas of low pressure. West of the sixty-fifth meridian fog was reported on the 2d, 3d, 22d, 23d, 26th, and 29th, attending the passage to the northward of areas of low pressure.

The following are limits of fog-areas on the north Atlantic Ocean, west of the fortieth meridian, for March, 1890, as reported by shipmasters:

Date.	Entered.		Cleared.		Date.	Entered.		Cleared.	
	Lat. N.	Lon. W.	Lat. N.	Lon. W.		Lat. N.	Lon. W.	Lat. N.	Lon. W.
	° ′	° ′	° ′	° ′		° ′	° ′	° ′	° ′
1-2	42 07	49 42	41 30	55 14	16-17	44 00	48 10	42 56	54 30
2	42 06	62 40	41 41	64 37	17	42 03	49 42	42 02	50 23
2	41 12	64 13	41 10	64 39	22	37 58	75 03	38 26	74 49
2	40 15	70 00	40 30	71 45	22	41 54	55 41	41 52	56 13
2-3	33 45	74 38	33 55	74 32	22	41 14	64 58	41 12	65 30
3-4	43 00	48 00	43 00	51 00	23	41 04	67 05	40 33	69 43
3-4	42 30	49 18	42 17	55 29	23	44 04	63 55	43 30	64 38
6	42 00	49 00	42 00	52 30	26	40 34	69 14	40 29	70 21
12	42 27	65 49	42 25	66 50	28-29	43 04	63 20	43 04	67 20
13-14	41 34	60 24	42 05	66 20	29	42 34	63 00	42 36	64 16
14	41 15	49 15	41 21	48 00	29-30	42 24	49 40	42 14	51 52
14	40 42	56 02	40 50	58 10					

6 TEMPERATURE OF THE AIR (expressed in degrees, Fahrenheit).

The distribution of mean temperature over the United States and Canada for March, 1890, is exhibited on chart ii by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Signal Service. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the departure is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Signal Service represents the mean of the maximum and minimum temperatures.

For March, 1890, the mean temperature was highest over extreme southern Florida and in the lower Rio Grande valley, where the mean values were above 70°, the highest mean reading, 71°.2, being reported at Rio Grande City, Tex. Over the Florida Peninsula, extreme southern Mississippi, generally over the southern half of Louisiana, the southern half of Texas east of the ninety-eighth meridian, in the more southern part of western Texas, and in extreme southwestern Arizona the mean temperature was above 60°. South of a line traced from the coast of northern North Carolina irregularly south of west to northern Texas, thence southwestward to south-central Arizona, thence to central Arizona, and thence northwestward to the California coast near the fortieth parallel the mean temperature was above 50°. The lowest mean readings were noted in Manitoba and in extreme northern Ontario, where they were below 10°, the lowest mean temperature, 6°, being reported at Winnipeg, Man. The mean values were below 20° north of a line traced from south of Rockliffe, Ont., to upper Michigan, thence irregularly westward to central North Dakota, and thence northwestward to the British Possessions north of eastern Montana; the mean temperature was also below 20° at stations in west-central Colorado. North of a line traced from Cape Breton Island, Gulf of Saint Lawrence, south of west to southern Iowa, and thence northwestward to extreme northwestern Montana, and over a considerable area of west-central Colorado the mean temperature was below 30°. On the immediate north Pacific coast the mean temperature varied from 43° to 47°; on the middle Pacific coast, from 47° to 55°; and on the south Pacific coast, from 52° to 58°.

For March, 1890, the mean temperature was generally above the normal along the eastern slope of the Rocky Mountains, from the south Pacific coast eastward over Texas, along the immediate Atlantic coast north of South Carolina, in New England, the Canadian Maritime Provinces, the Saint Lawrence Valley, the eastern part of the lower lake region, the northeastern part of the upper lake region, and in eastern Manitoba; elsewhere the month was cooler than usual. The greatest departures above the normal temperature were noted in eastern Nova Scotia and on the coast of northern North Carolina, where they exceeded 4°, and the departures above the normal were more than 3° in the central Saint Lawrence valley and in New Mexico. The greatest departures below the normal temperature were reported in central and northern Illinois, and in the British Possessions north of Montana, where they equalled or exceeded 5°; and over the entire upper Mississippi valley and in the middle Sacramento valley the departures below the normal temperature were more than 4°.